

Assessing the NCEP CFS Model Bias over the Tropical Eastern Pacific Stratus Deck and Its Impact on the Simulation of Climate

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Figures:

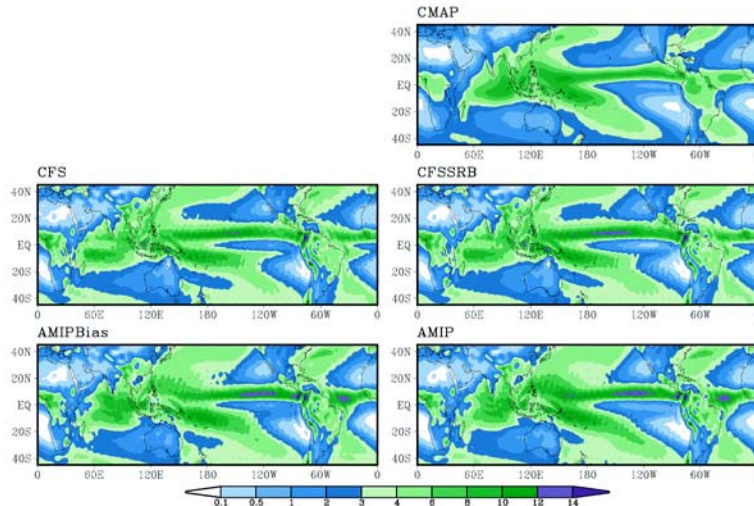


Figure 1: Annual mean precipitation (mm/day) from a) CMAP observations (top), b) CFS fully coupled CMIP simulations (middle left); c) CFS coupled simulation with radiation over SE Pacific corrected (middle right); d) CFS AMIP simulations forced observed SST plus SST differences between a) and b) (bottom left); and f) CFS AMIP simulations forced by observed SST (bottom right).

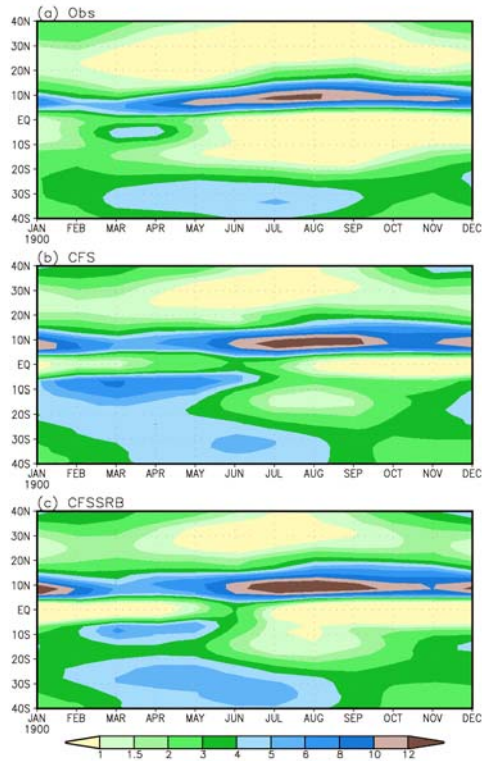


Figure 2: Seasonal migration of ITCZ precipitation (mm/day) over Eastern Pacific depicted in a) the CMAP observations (top); b) CFS fully coupled simulations (middle); and c) CFS coupled simulations with radiation over SE Pacific corrected (bottom).

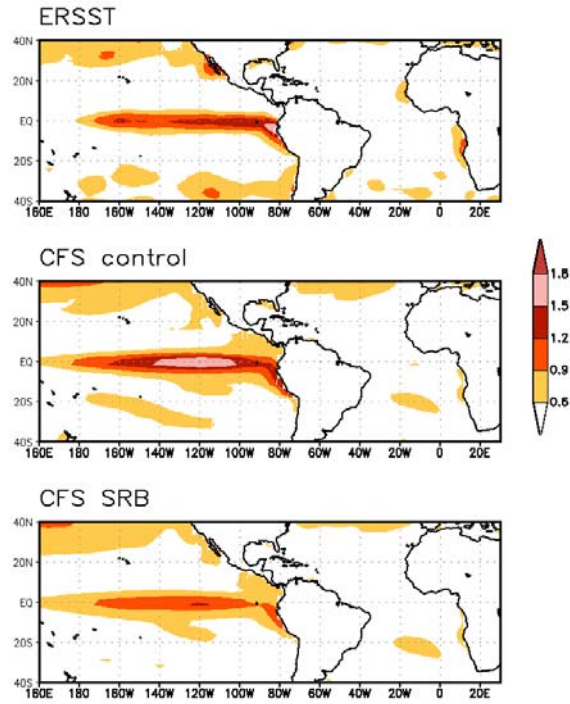


Figure 3: Standard deviation of monthly SST anomaly ($^{\circ}\text{C}$) from a) the ERSST observations (top); b) CFS fully coupled simulations (middle); and c) CFS coupled simulations with radiation over SE Pacific corrected (bottom).

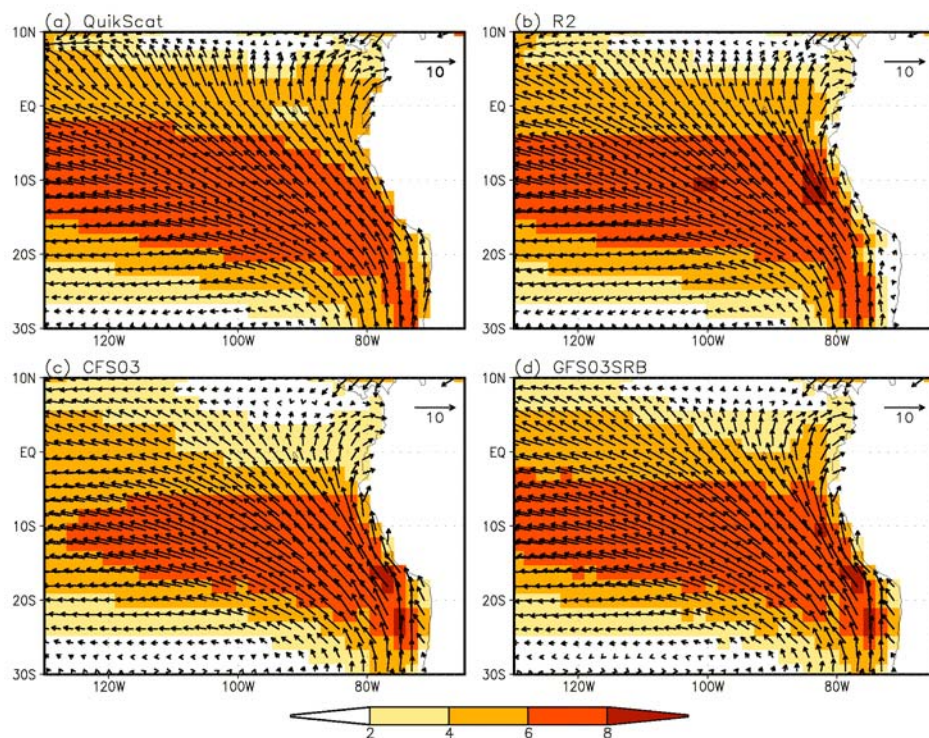


Figure.4: Annual mean surface wind (m/s) derived from a) QuikScat satellite observations (top left); b) NCEP Reanalysis 2 (top right); c) CFS fully coupled simulations (bottom left); and d) CFS coupled simulations with radiation corrected over SE Pacific (bottom right).

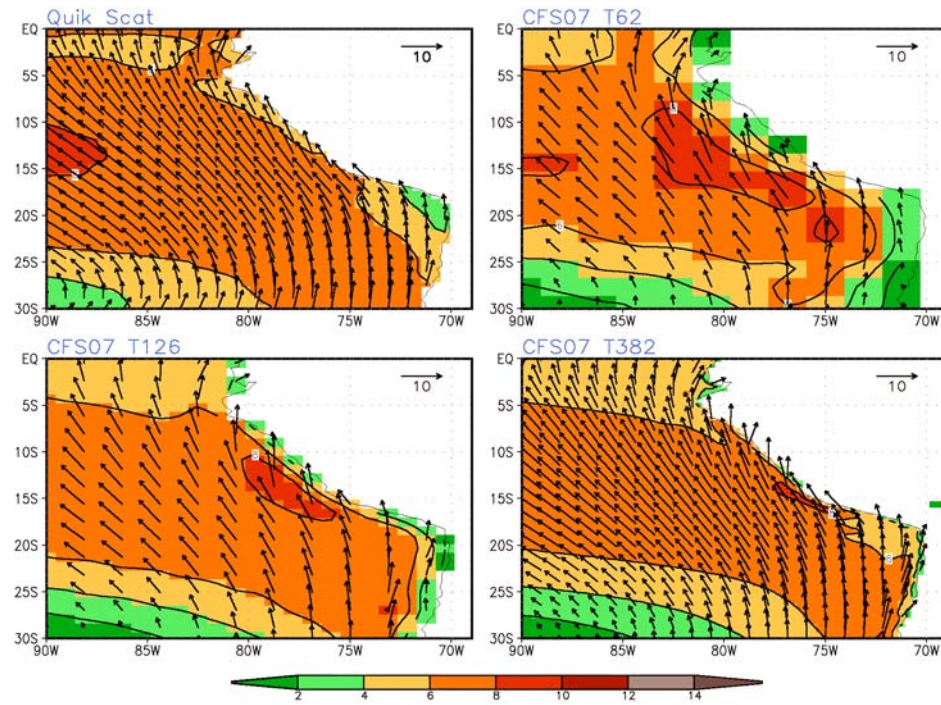


Figure.5: Annual mean surface wind (m/s) derived from QuikScat satellite observations (top left), and CFS fully coupled simulations at T62 (top right), T126 (bottom left), and T382 (bottom right), respectively.

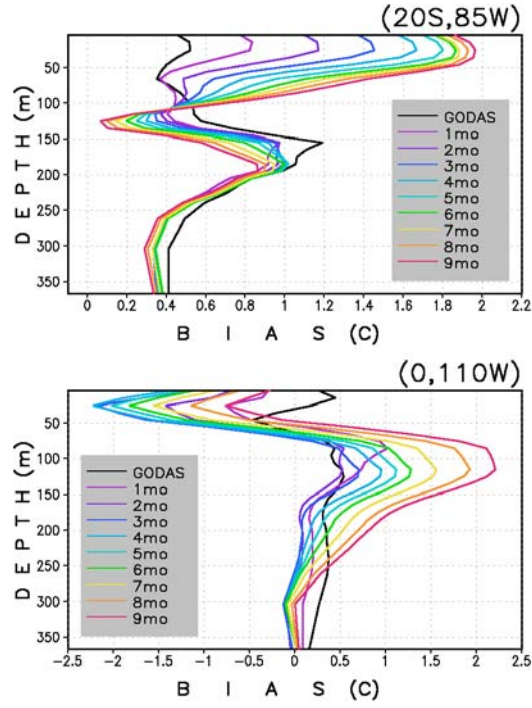


Figure 6 Vertical profiles of CFS annual mean subsurface temperatures bias ($^{\circ}\text{K}$) at ($20^{\circ}\text{S}, 85^{\circ}\text{W}$, top), and ($0^{\circ}, 110^{\circ}\text{W}$, bottom). Biases are computed against the in situ observations from the WHOI IMET buoy at ($20^{\circ}\text{S}, 85^{\circ}\text{W}$), and the EPIC enhanced buoy at ($0^{\circ}, 110^{\circ}\text{W}$), respectively. Biases for the CFS initial condition (GODAS) and forecasts for month 1 to 9 are plotted in different colors.